



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/699,959	11/03/2003	Neal Krieger	17,761-003	5069
27305	7590	04/10/2007	EXAMINER	
HOWARD & HOWARD ATTORNEYS, P.C. THE PINEHURST OFFICE CENTER, SUITE #101 39400 WOODWARD AVENUE BLOOMFIELD HILLS, MI 48304-5151			MCGRAW, TREVOR EDWIN	
			ART UNIT	PAPER NUMBER
			3752	
SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE		DELIVERY MODE	
3 MONTHS	04/10/2007		PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

ED

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/699,959	KRIEGER ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Trevor McGraw	3752	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 03 November 2003.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-22 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-22 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau.(PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO/SB/08)  
     Paper No(s)/Mail Date 11/03/2003.

4) Interview Summary (PTO-413)  
     Paper No(s)/Mail Date. \_\_\_\_\_.  
 5) Notice of Informal Patent Application  
 6) Other: \_\_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In lines 20-23 of Claim 1, Examiner cannot determine the relationship between the primary control position (P) and the second control signal and is unclear as to if the primary control position and the second control signal are one in the same.

In line 29 of Claim 1, Examiner is unclear as to which "system" Applicant is claiming; the "drive system" of line 11 or the "corner drive system" of line 13. Appropriate clarification is required.

***Examiner's Comment***

Examiner respectfully requests that Applicant make clear for the record and better elucidate the relationship between the primary control position (P) of the main irrigation portion and the second control signal as it is not presently clear of the limitation distinctness in the Claims or the disclosure.

***Claim Rejections - 35 USC § 102***

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 16-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Barker et al. (US 6,290,151).

In regard to Claim 1 and 16-22, Barker et al. (6,290,151) teaches an irrigation system for conveying a fluid to a region having a main boundary (56) and an outer boundary (76) outlying the main boundary (56) where the irrigation system has a center pivot (12), a main irrigation portion (16) having a proximal end at the center pivot (12) and radially extends to a distal end for rotation about the center pivot (12) to irrigate a region within the main boundary (Figure 3) where a corner irrigation span (26) is coupled to the main irrigation portion (16) and radially extends from the distal end of the main irrigation portion (16) for irrigating the region between the main boundary (56) and the outer boundary (76) where a drive system (20,22) moves the main irrigation portion (16) about the center pivot (12) and along the main boundary (56) and a corner drive system (32,34) that includes a steering unit (36) that moves the corner irrigation span (26) with the main irrigation span (16) along the outer boundary (76). The irrigation system of Barker et al. further comprises a first electrical generator (73) that is operative between the corner irrigator span (26) and the main irrigator portion (16) for generating a first control signal representing an operating angle position (Column 3, lines 29-61) between the corner irrigator span (26) and the main irrigation portion (16) where the first control signal varies as the operating angle varies and a second electrical generator

(70) is coupled to the main irrigator portion (16) for generating a second control signal that represents the primary control position (Column 3, lines 29-45) of the main irrigation portion (16) where the second control signal varies as the primary control position varies and a controller (71) that is programmed to receive the control signals and control the corner drive system (26) based on the control signals to maintain the target operating angle between the corner irrigator span (26) and the main irrigator portion (16) to ensure that the corner irrigator span (26) follows the outer boundary (76) where the system is characterized by the second electrical generator (70) is a position determining sensor (Column 3, lines 29-38) for sensing the reference signal that determines the primary control position of the main irrigation portion (16).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barker et al. (US 6,290,151) in view of Tucker et al. (US PGPUB 20020117214) and further in view of and Abts (US PGPUB 20060027677).

In regard to Claim 2-5, Barker et al. as taught and described above is silent as to having a position-determining sensor that is in the form of an electronic compass. However, Tucker et al. (US PGPUB 20020117214) teaches where an electronic compass can be used for determining the position of a center pivot (Paragraph 69). It would have been obvious to one having ordinary skill in the art at the time the present invention was made to provide an electronic compass as taught by Tucker et al. (paragraph 69) to be fixed to the irrigation system of Barker et al. since it can be shown that electronic compass and global positioning satellite (GPS) technology are art recognized equivalents with their use in the irrigation system art and the selection of any of these known equivalents to be used as a positioning sensor would be within the level of ordinary skill in the art for determining an accurate position for a center pivot using longitude and latitude coordinates.

With regard to Claims 6 and 7, Additionally, Barker et al. discloses the claimed invention except for a third generator that is embodied as an angle resolver to be fixed to an irrigation system. However, Abts (PG PUB 20060027677) teaches that the use of an angle resolver has been known in the art for over the past twenty-five (25) years to monitor the position of a center pivot. It would have been obvious to one having ordinary skill in the art at the time the invention was made to include a third generator in the form of an angle resolver to the center pivot of the irrigation system of Barker et al. since it can be shown that angle resolvers and global positioning satellite (GPS) technology are art recognized equivalents as taught by Abts (Paragraphs 7-11) for their use in the irrigation system art and the selection of any of these known equivalents to

be used as a control position sensor of an irrigator span next to a center pivot would be within the level of ordinary skill in the art so as to increase the accuracy of the irrigator span with the control position sensor.

Claims 8-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barker et al. (US 6,290,151) in view of Unruh (US 5,947,393).

With regard to Claims 8-15, Barker et al. as taught and described above is silent and does not explicitly teach where the corner irrigator span has an electrical generator embodied as a potentiometer for varying the speed of the corner drive system. However, Unruh (US 5,947,393) teaches that it is known to have a potentiometer (92) for varying the speed of a corner drive system (Column 4, Line 61 thru Column 5, Line 24). It would have been obvious to one having ordinary skill in the art at the time the present invention was made to provide the corner drive system of Barker et al. with the potentiometer of Unruh, in order to provide for an alternative means for controlling the corner irrigation span drive system by varying the speed of the span as it is further old and well known to use potentiometers within the irrigation system art.

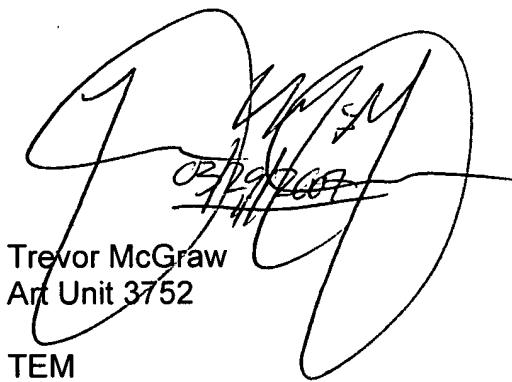
### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. McQuinn (US 6,230,091), Hauwiller et al. (US 6,606,542), Hauwiller et al. (US PGPUB 2001/0016788), Lyle et al. (US 4,763,836).

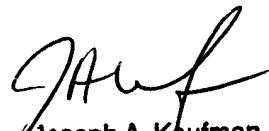
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trevor McGraw whose telephone number is (571) 272-7375. The examiner can normally be reached on Monday-Friday (2nd & 4th Friday Off).

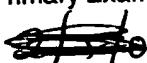
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Scherbel can be reached on (571) 272-4919. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Trevor McGraw  
Art Unit 3752  
TEM



Joseph A. Kaufman  
Primary Examiner  
  
4/2/07